Accidental Drug Intoxication Deaths in Connecticut:

Medical Examiner Preliminary Data 2017

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http://www.ct.gov/ocme/site/default.asp

Office of the Chief Medical Examiner

The State agency responsible for the investigation of sudden, unexpected, or violent deaths in Connecticut.

Reportable Cases by Statute

- Accidents, suicides, homicides.
- Poisoning, drug abuse, addiction.
- Disease with potential public health threat.
- Deaths resulting from employment.
- Sudden and unexpected deaths not caused by a readily recognized disease.
- Dead on arrival or within 24 hours of admission to hospital.
- Death under anesthesia, in operating or recovery room, following transfusions, or during diagnostic procedures.

Autopsy and Investigations

Connecticut *Typical* Year

- OCME Death Investigations: >20,000
- OCME Autopsies: ~2,300
- Deaths in CT per year: ~30,000
- Population: 3,600,000

Medical Legal Investigators

- Death reported and MLI does initial investigation
- Hospital vs. Scene Death
- Writes report of circumstances, scene (photos)
- Next morning: MEs review cases and triage autopsies
- 24/7, 365 days a year

Drug Overdose Death Investigations

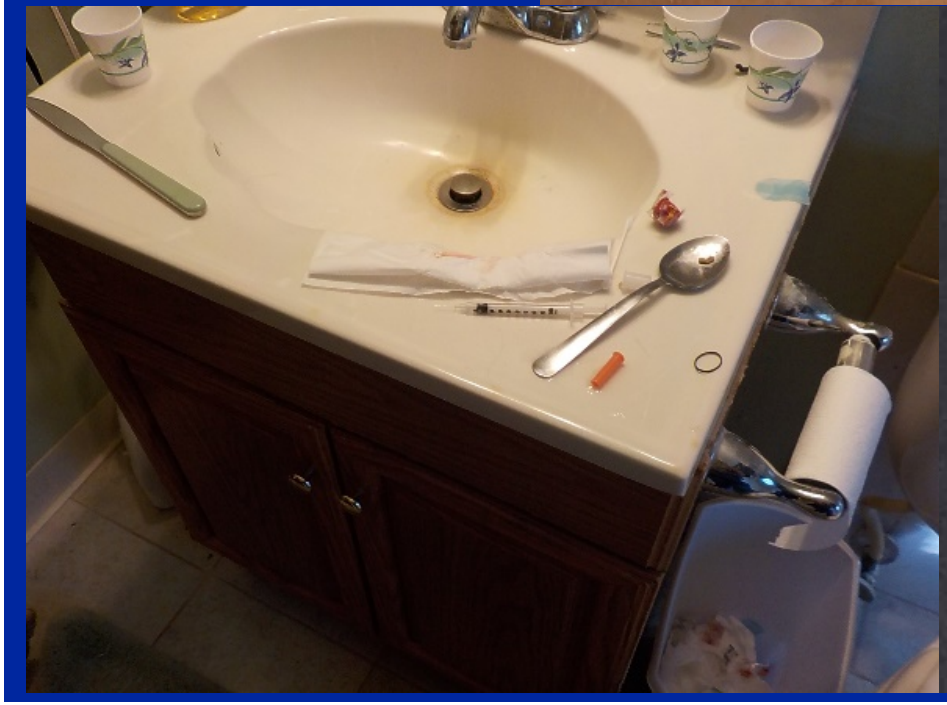
Office of Chief Medical Examiner

Investigative Procedure

- Scene Investigation
- Hospital Report of Death
- External Examination of the Body
- Autopsy Examination
- Toxicology testing on Blood
- Issuance of Death Certificate
  - Pending
  - Amended

Common Scenario

- 30 year old found Dead at Home in the Bathroom
- History of Substance Abuse
- Scene Investigation
  - Drugs Packets / Markings
  - Spoon
  - Tourniquet
  - Needles / Pipes



Physical Exam Findings

Autopsy Findings

- Typically non-specific
  - Congestion of Lungs
  - Distention of Bladder
- Rule-out other Causes of Death
- Rule-out Occult Trauma
- Toxicology Pending
  - Average Turnaround 12 days, complexity dependent

What drugs are we finding?

Positive Findings:

Compound	Result	Units	Matrix Source
Etizolam	23	ng/mL	001 - Femoral Blood
Ethanol	12	mg/dL	001 - Femoral Blood
Blood Alcohol Concentration (BAC)	0.012	g/100 mL	001 - Femoral Blood
Carfentanil	2.1	ng/mL	001 - Femoral Blood
4-ANPP	5.4	ng/mL	001 - Femoral Blood
Butyryl Fentanyl/Isobutyryl Fentanyl	3.3	ng/mL	001 - Femoral Blood
U-47700	1.3	ng/mL	001 - Femoral Blood
Alprazolam	10	ng/mL	001 - Femoral Blood
Methadone	800	ng/mL	001 - Femoral Blood
EDDP	160	ng/mL	001 - Femoral Blood
Sertraline	330	ng/mL	001 - Femoral Blood
Desmethylsertraline	560	ng/mL	001 - Femoral Blood
Fentanyl	27	ng/mL	001 - Femoral Blood
Norfentanyl	2.8	ng/mL	001 - Femoral Blood
Acetyl Fentanyl	0.12	ng/mL	001 - Femoral Blood
Codeine - Free	16	ng/mL	001 - Femoral Blood
Morphine - Free	490	ng/mL	001 - Femoral Blood
6-Monoacetylmorphine - Free	13	ng/mL	001 - Femoral Blood

See Detailed Findings section for additional information

Testing Requested:

Analysis Code	Description
10052B	Postmortem, Expanded w/Vitreous Alcohol Confirmation, Blood (Forensic) (CSA)
0570B	Designer Benzodiazepines, Blood (Forensic)
1480B	Designer Opioids (2017 Scope), Blood

11. Etizolam - Femoral Blood:

Etizolam is a benzodiazepine drug that is used as a novel psychoactive substance. It is reported to have CNS depressant properties and shares anticonvulsant, muscle relaxant, hypnotic, anxiolytic and sedative effects with other benzodiazepines. It is not approved for use in the United States, but is available in some other countries.

Average peak plasma concentrations following a single 0.5 mg and 1 mg dose were reported to be 8.3 ng/mL and 17 - 21 ng/mL (extensive and poor metabolizers, respectively) approximately 1 hour after dosing, respectively. Chronic oral administration of 1 mg daily resulted in an average steady -state plasma concentrations of 9.3 ng/mL. Reported half-lives are 7 - 15hours.

17. U-47700 (U-4) - Femoral Blood:

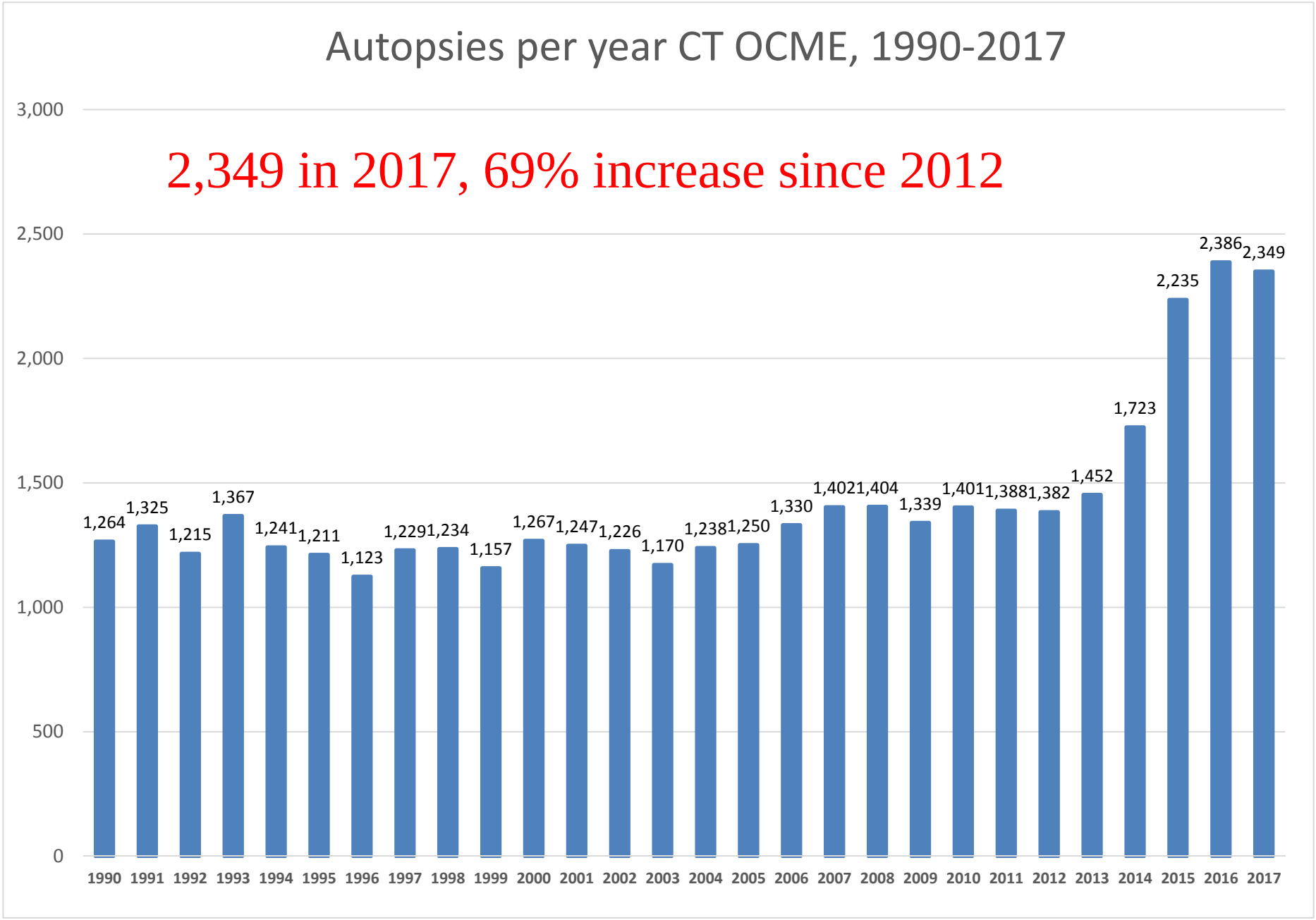
U-47700 is an opioid analgesic developed in the 1970s but never marketed for use as a pharmaceutical product. In 2015, it began to appear as a novel psychoactive substance, possibly as an alternative to commonly abused opioids such as heroin or fentanyl. It is expected to behave the same way as other opioids. Its effects include analgesia and central nervous system depression.

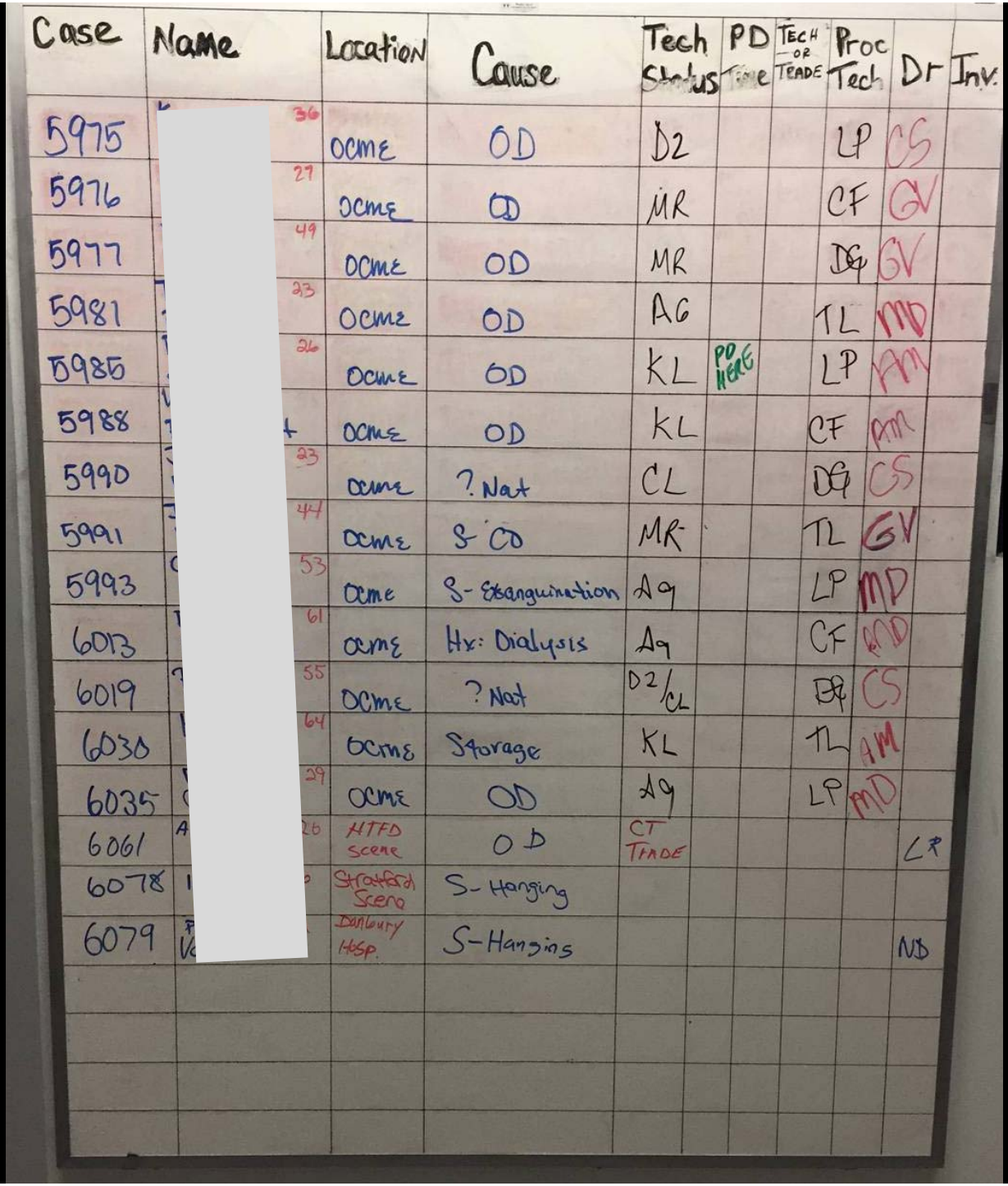
Blood concentrations of U-47700 in 16 post-mortem blood samples were 17 - 490 ng/mL (Average 253 +- 150 ng/mL). Other fatalities involving U-47700 report blood concentrations ranging from 13 - 1460 ng/mL; other substances may have been present. In addition, U-47700 may undergo post-mortem redistribution; central and peripheral blood results in a fatality were reported as 340 and 190 ng/mL, respectively. Serum U-47700 concentrations in individuals who survived hospitalizations for intoxications ranged from 7.6-394 ng/mL.

The blood to plasma ratio of U-47700 is unknown.

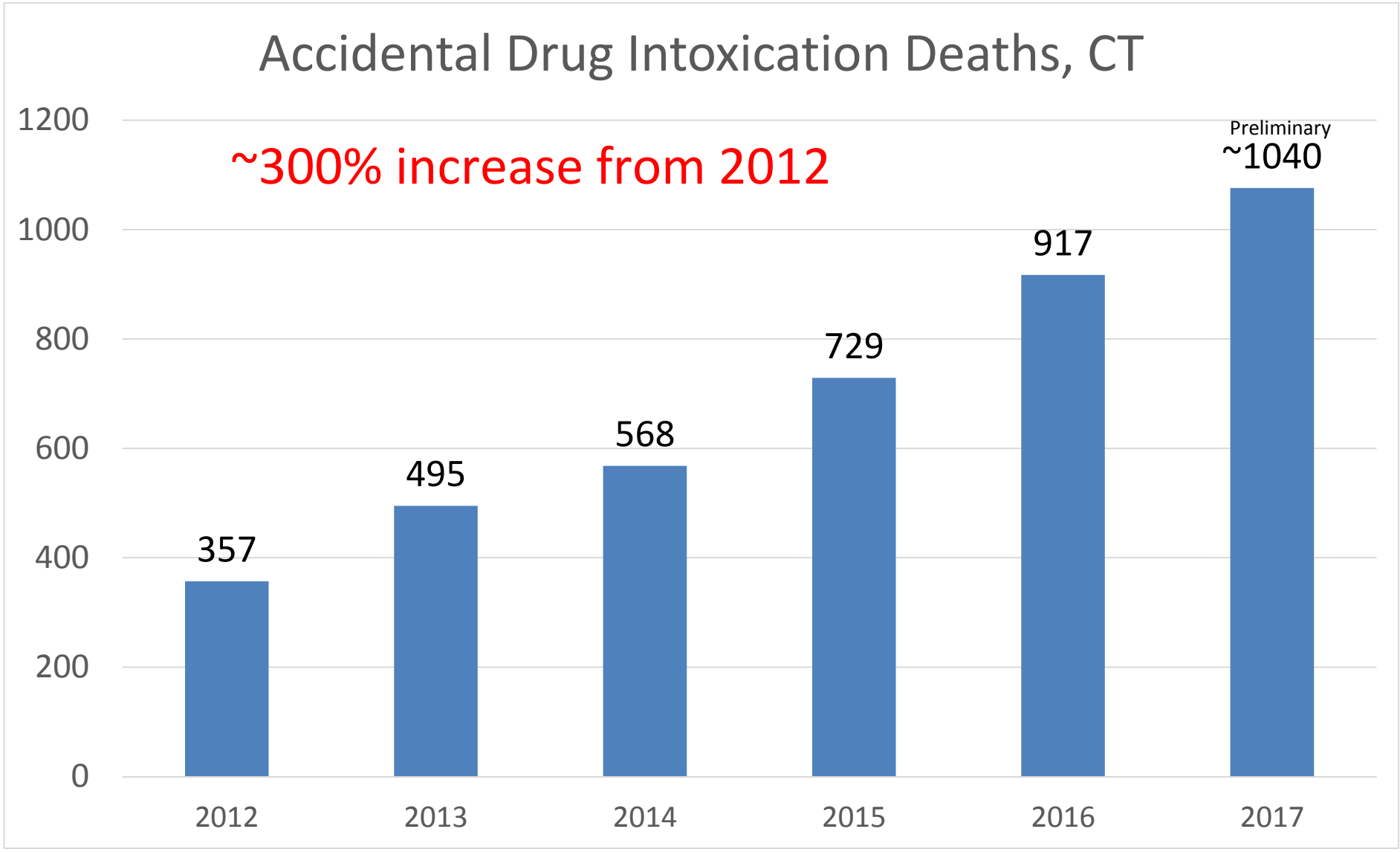
OCME Death Investigation Trends

Drug Intoxication Related


Autopsies per year CT OCME, 1990-2017
2,349 in 2017, 69% increase since 2012
3,000
2,500
2,000
1,500
1,000
500
0
1,264
1,325
1,215
1,367
1,241
1,211
1,123
1,229
1,234
1,157
1,267
1,247
1,226
1,170
1,238
1,250
1,330
1,402
1,404
1,339
1,401
1,388
1,382
1,452
1,723
2,235
2,386
2,349
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017



Case	Name		Location	Cause	Tech Status	PD Time	Tech or Trade	Proc Tech	Dr	Inv.
5975		36	OCME	OD	D2			LP	CS	
5976		27	OCME	OD	MR			CF	GV	
5977		49	OCME	OD	MR			DG	GV	
5981		23	OCME	OD	AG			TL	MD	
5985		26	OCME	OD	KL	PD HERE		LP	AM	
5988			OCME	OD	KL			CF	AM	
5990		23	OCME	? Nat	CL			DG	CS	
5991		44	OCME	S - CO	MR			TL	GV	
5993		53	OCME	S - Exsanguination	AG			LP	MD	
6013		61	OCME	Hx: Dialysis	AG			CF	MD	
6019		55	OCME	? Nat	D2/CL			DG	CS	
6030		64	OCME	Storage	KL			TL	AM	
6035		29	OCME	OD	AG			LP	MD	
6061		26	HTFD Scene	OD	CT TRADE					LR
6078			Stratford Scene	S - Hanging						
6079			Danbury Hosp.	S - Hanging						ND


Accidental Drug Intoxication Deaths, CT
~300% increase from 2012
1200
1000
800
600
400
200
0
357
495
568
729
917
Preliminary
~1040
2012
2013
2014
2015
2016
2017

Connecticut Accidental Drug Intoxication Deaths

	2012	2013	2014	2015	2016	2017 (Preliminary)
Accidental Intoxication Deaths*	357	495	568	729	917	~1040
-Heroin, Morphine, and/or Codeine detected	195	286	349	446	541	499
-Heroin in any death	174	258	327	417	508	474
-Heroin + Fentanyl	1	9	37	110	279	333
-Heroin + Cocaine	50	69	73	107	153	169
-Morphine/Opioid/Codeine NOS	21	28	22	29	33	25
-Cocaine in any death	105	147	126	177	274	347
-Oxycodone in any death	71	75	107	95	110	95
-Methadone in any death	33	48	51	71	84	99
-Hydrocodone in any death	15	19	15	20	20	16
-Fentanyl in any death	14	37	75	189	483	675
-Fentanyl + Cocaine	2	16	14	42	143	220
-Fentanyl + Prescription Opioid	4	7	14	23	72	
-Fentanyl + Heroin	1	9	37	110	279	333
-Fentanyl/Opioid Analogues**						
-Any Opioid + Benzodiazepine	41	60	140	221	232	~260
-Hydromorphone	1	0	12	17	22	~17
-Amphetamine/Methamphetamine	7	5	11	20	19	42
-MDMA	0	0	2	1	1	3

*Some deaths had combinations of drugs; pure ethanol intoxications are not included.

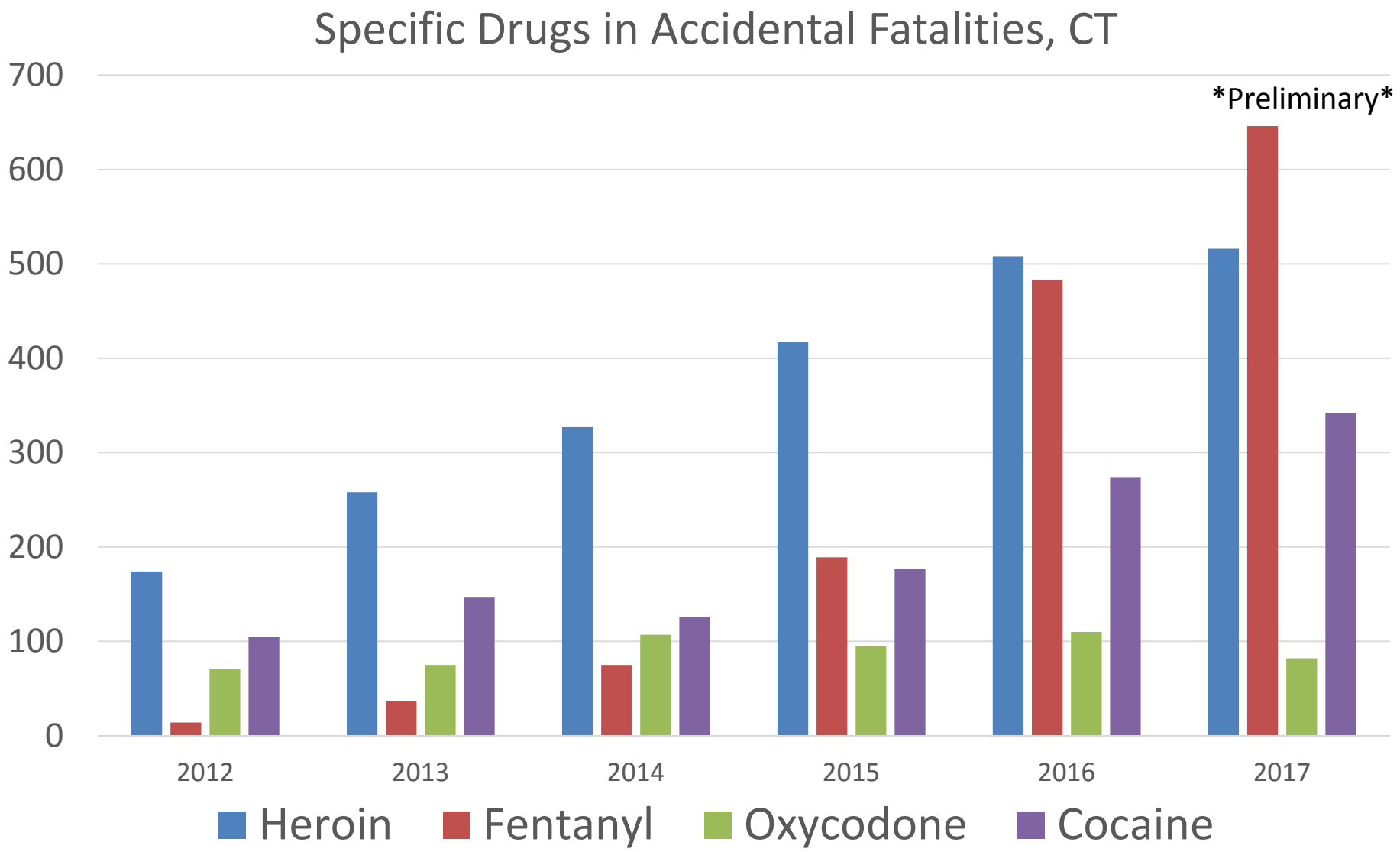
** These include Acetyl Fentanyl, Furanyl Fentanyl, Carfentanil, Fluorobutyryl Fentanyl, Butyryl Fentanyl, and U47700, NOS, not otherwise specified

Updated 2/16/18

Fentanyl and Heroin Preliminary 2017

Preliminarily…

- **There have been ~1040 accidental drug deaths in 2017,**
  - **~ 675 (~65%) involved Fentanyl**
  - **~475 – 499 (~46%) involved Heroin**
- **Several Final Death Certifications are Still Pending**
- **In 2016 there were 917 accidental drug deaths,**
  - **483 involved Fentanyl (57%)**
  - **541 involved Heroin (59%)**


Specific Drugs in Accidental Fatalities, CT
Preliminary
700
600
500
400
300
200
100
0
2012
2013
2014
2015
2016
2017
Heroin
Fentanyl
Oxycodone
Cocaine

Resources for the Public

Office of Chief Medical Examiner

Office of the Chief Medical Examiner

Frequently Asked Questions
Administrative Reports
Annual Statistics
Of Interest To

Annual Statistics

Calendar Year Statistics

Calendar Year Stats Chart

Calendar Years 2012 to 2017 Accidental Drug Intoxication

2015 to 2017 (town/city) Accidental Drug Intoxication in Excel

CT Open Data Accidental Drug Related Deaths

Fiscal Year Statistics

Suicide Statistics

Statistics in Excel Spreadsheet (90 KB)

Other Documents

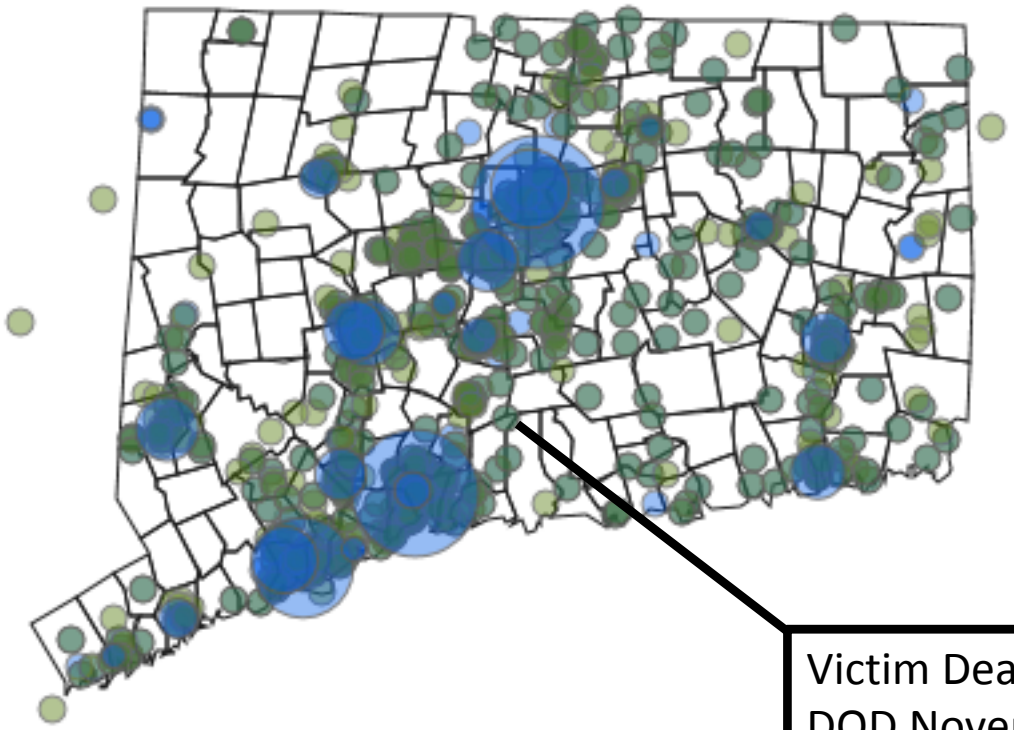
NAME Provisional Accreditation

NAME Inspection

2015 and 2016 OCME Appropriations Testimony

Spreadsheet on the OCME website

Date Reported	InjuryCity	Sex	Race	Age	Residence City	Death City	Amended DC	Heroin	Cocaine	Fentanyl
1/1/2017	Bristol	Female	White	35	Prospect	Bristol	Acute Intoxication Due To The Combined Effects Of Cocaine, Fentanyl, and Acetyl Fentanyl		Y	Y
1/2/2017	Hartford	Male	Hispanic, White	53	Hartford	Hartford	Acute Intoxication due to the Combined Effects of Fentanyl and Heroin	Y		Y
1/2/2017	Torrington	Male	White	53	Torrington	Torrington	Acute Intoxication due to the Combined Effects of Fentanyl and Heroin	Y		Y
1/2/2017	Unknown	Male	White	54	Hamden	New Haven	COMPLICATIONS OF ACUTE FENTANYL AND ALCOHOL TOXICITIES			Y
1/3/2017	Meriden	Male	White	36	Meriden	Meriden	Acute 3,4-Methylenedioxymethamphetamine (MDMA) Intoxication			
1/3/2017	New London	Female	White	45	New London	New London	Acute Intoxication due to the Combined Effects of Heroin, Cocaine and Cyclobenzaprine	Y	Y	
1/4/2017	Danbury	Male	White	27	Danbury	Danbury	Acute Intoxication due to the Combined Effects of Heroin, Cocaine and Clonazepam	Y	Y	
1/4/2017	Waterbury	Male	White	55	Niskayuna	Waterbury	Acute Intoxication Cocaine and Fentanyl		Y	Y
1/4/2017	Hamden	Male	White	56	Hamden	Hamden	Acute Intoxication Alprazolam, Clonazepam, Oxycodone, Promethazine, and Zolpidem, recent cocaine use		Y	
1/4/2017	Waterbury	Male	White	56	Unknown	Waterbury	Acute Intoxication due to the Combined Effects of Heroin and Alcohol	Y		
1/5/2017	Danbury	Male	White	23	Danbury	Danbury	Acute Fentanyl Intoxication			Y
1/5/2017	Torrington	Male	White	29	Torrington	Torrington	Acute Heroin Intoxication	Y		
1/5/2017	Waterbury	Male	White	32	Unknown	Waterbury	Acute Intoxication due to the Combined Effects of Fentanyl, Heroin, Cocaine, Phencyclidine, Alprazolam, Clonazepam and Diazepam	Y	Y	Y
1/5/2017	Niantic	Male	White	34	East Hartford	New London	Acute Intoxication From the Combined Effects of Fentanyl, Heroin, and diphenhydramine	Y		Y



2016 Accidental Drug Intoxication Deaths

Green: Out-of-Hospital death
Blue: Hospital death

Victim Death Location Information
DOD November 25, 2016
Sex Male
Race White
Age 28
Cause: Acute Intoxication From the Combined Effects of Fentanyl, Acetyl Fentanyl, Morphine, Buprenorphine, and Alprazolam

CT Open Data.
https://data.ct.gov/Health-and-Human-Services/Accidental-Drug-Related-Deaths-2012-June-2017/rybz-nyjw

Statistical Analysis Center
Criminal Justice Policy and Planning Division
Office of Policy and Management

“Forensic pathologists practice in the finest tradition of preventative medicine and public health by making the study of the dead benefit the living.”

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